

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 April 2004 (22.04.2004)

PCT

(10) International Publication Number
WO 2004/033018 A1

(51) International Patent Classification⁷: A61M 25/10,
5/315

(21) International Application Number:
PCT/US2003/029918

(22) International Filing Date:
23 September 2003 (23.09.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/418,053 11 October 2002 (11.10.2002) US

(71) Applicant: BECTON DICKINSON AND COMPANY
[US/US]; 1 Becton Drive, Franklin Lakes, NJ 07417-1880
(US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): ALHEIDT,

Thomas, A. [US/US]; 300 Holland Mtn. Rd., Stockholm,
NJ 07460 (US). HOTTOVY, Tracy, Ray [US/US]; 6753
Country Club Drive, Columbus, NE 68601 (US). DRAKE,
Dustin [US/US]; 5022 33rd Street, Columbus, NE 68601
(US).

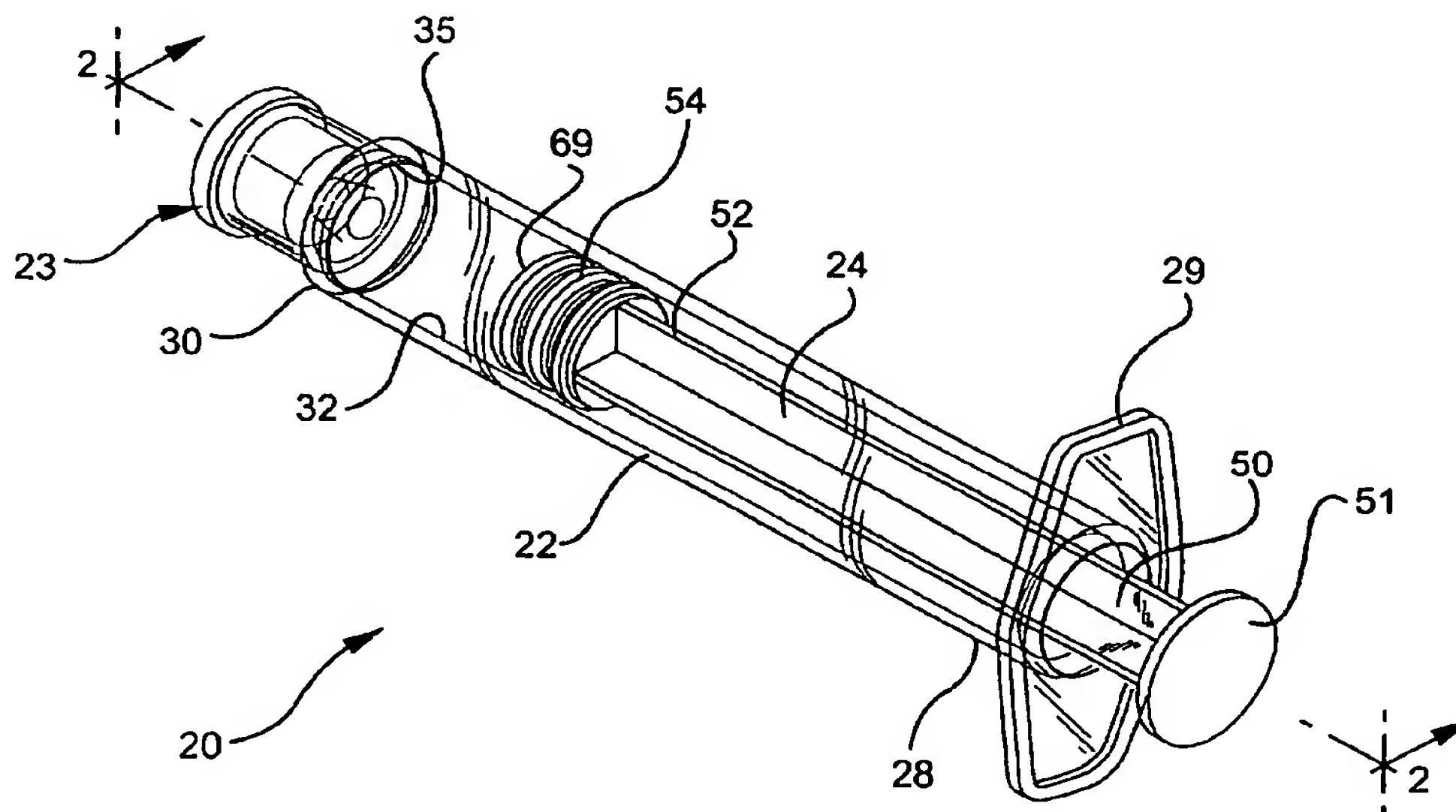
(74) Agent: VOELLMICKE, John, L.; Becton, Dickinson
and Company, 1 Becton Drive, Franklin Lakes, NJ 07417-
1880 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,
SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,

[Continued on next page]

(54) Title: FLUSH SYRINGE HAVING ANTI-REFLUX FEATURES



(57) Abstract: An I.V. flush syringe assembly includes a barrel having an inside surface defining a chamber for retaining fluid, an open proximal end and a distal end with a passageway therethrough in fluid communication with the chamber. An elongate plunger having a proximal end, a distal end and a flexible stopper is slidably positioned in fluid-tight engagement with the inside surface of the barrel for drawing fluid into and out of the chamber by movement of the stopper relative to the barrel. The barrel includes anti-reflux structure for holding said stopper in a partially deflected position after has been delivered from the chamber and the stopper is being force against the distal end of the chamber.

WO 2004/033018 A1